Amended Claims

1. (Currently amended) An interface to core system software
in a user terminal, comprising:

a computer readable medium having computer program
code; and

means for executing said computer program code to
provide at least one software interface between: (a)
middleware ~~that mediates between an application program and
the core system software~~; and (b) the core system software
and cable settop hardware;~~;~~

said middleware mediating between an application
program and the core system software; and

said software interface enabling said application
program to access a function of the terminal provided by
said core system software via said middleware;

wherein the software interface enables compatibility
between: (1) the core system software and cable settop
hardware; and (2) different middleware.

2. (Original) The interface of claim 1, wherein:
the function of the terminal comprises acquiring a
service.

3. (Original) The interface of claim 1, wherein:
the function of the terminal comprises acquiring a
service by tuning a specified virtual channel number or
source ID using a specified service path.

4. (Original) The interface of claim 1, wherein:

the function of the terminal comprises determining the status of a service.

5. (Original) The interface of claim 1, wherein:

the function of the terminal comprises requesting status information regarding a currently-tuned primary service on a specified service path.

6. (Original) The interface of claim 1, wherein:

the function of the terminal comprises registering a client for unsolicited service status updates for a currently tuned primary service on a specified service path.

7. (Original) The interface of claim 1, wherein:

the function of the terminal comprises canceling a registration for service status updates that was previously set up.

8. (Original) The interface of claim 1, wherein:

the function of the terminal comprises obtaining a summary of current Virtual Channel Table information for all defined virtual channels.

9. (Original) The interface of claim 1, wherein:

the function of the terminal comprises obtaining a summary of current Virtual Channel Table information and characteristics for all defined DOCSIS downstream channels.

10. (Original) The interface of claim 1, wherein:

the function of the terminal comprises adding a service component of a specified type to a primary service on a specified service path.

11. (Original) The interface of claim 1, wherein:

the function of the terminal comprises deselecting a specified component from a primary service on a specified service path.

12. (Original) The interface of claim 1, wherein:

the function of the terminal comprises selecting a service component that carries particular multicast datagrams.

13. (Original) The interface of claim 1, wherein:

the function of the terminal comprises extracting datagram fragments from datagram sections being carried on one or more elementary PID stream components.

14. (Original) The interface of claim 1, wherein:

the function of the terminal comprises deselecting a specified stream component that was previously selected.

15. (Previously presented) The interface of claim 1, wherein:

the function of the terminal comprises requesting a message from a text or data-service component that was previously selected.

16. (Original) The interface of claim 1, wherein:

the function of the terminal comprises at least one

of:

    acquiring downstream data from a specified service source; and

    releasing access to downstream data from a specified service connection.

17. (Original) The interface of claim 1, wherein:

    the function of the terminal comprises receiving data or text from a specified background service connection that was previously acquired.

18. (Previously presented) The interface of claim 1, wherein:

    the function of the terminal comprises obtaining at least one virtual channel number associated with a specified source identifier.

19. (Original) The interface of claim 1, wherein:

    the function of the terminal comprises obtaining a source identifier associated with a specified virtual channel number.

20. (Original) The interface of claim 1, wherein:

    the function of the terminal comprises obtaining a list of pending changes to a Virtual Channel Table.

21. (Original) The interface of claim 1, wherein:

    the function of the terminal comprises obtaining a Defined Channel Bit Map (DCBM) for a specified channel type that represents currently defined virtual channels/services.

22. (Original) The interface of claim 1, wherein:

the function of the terminal comprises identifying a next audio and/or video component for a service.

23. (Original) The interface of claim 1, wherein:

the function of the terminal comprises obtaining a virtual channel number associated with a specified application identifier.

24. (Original) The interface of claim 1, wherein:

the function of the terminal comprises obtaining an application identifier associated with a specified Virtual Channel Number.

25. (Original) The interface of claim 1, wherein:

the function of the terminal comprises obtaining an application identifier associated with a specified source name string.

26. (Original) The interface of claim 1, wherein:

the function of the terminal comprises obtaining a source name string identifier associated with a specified application ID.

27. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises managing a configuration of the terminal.

28. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises obtaining at least one of:

current terminal configuration information;

Electronic Program Guide (EPG) information;

current converter system status; and

a system timestamp with local time.

29. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises at least one of:

registering a client for unsolicited system timestamp updates; and

canceling a registration for system timestamp updates.

30. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises setting an output channel number for RF modulator hardware.

31. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises setting the terminal to an On or Off state.

32. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises switching between different utility outlet modes.

33. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises selecting whether an RF signal is routed through the terminal or bypasses the terminal.

34. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises setting a consumer's preferred language.

35. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises indicating an unsolicited event.

36. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises at least one of:

registering a client for unsolicited event indication messages; and

canceling a registration for unsolicited event indication messages.

37. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises managing privacy.

38. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises at least one of:

providing a Cable Modem's public key to a DOCSIS Driver;

performing decryption operations on an encrypted Authorization Key provided by a DOCSIS Driver;

generating a Key Encryption Key (KEK) based on a decrypted Authorization Key;

generating an upstream hashed-based message authentication code (HMAC) Key;

authenticating a Key Request message, and return an
upstream hashed-based message authentication code (HMAC)
keyed message digest to a DOCSIS Driver;

generating a downstream hashed-based message
authentication code (HMAC) Key;

validating a downstream hashed-based message
authentication code (HMAC) using a downstream HMAC key; and

decrypting an encrypted Traffic Encryption Key (TEK)
using a Key Encryption Key (KEK), and returning the TEK to
a DOCSIS Driver.

39. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises managing
objects that are downloaded by the terminal.

40. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises
searching for a currently loaded object and returning
information thereof.

41. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises searching for a
next currently loaded object and returning information
thereof.

42. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises registering as
a manager for managed objects.

43. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises creating and writing an object in one atomic operation.

44. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises at least one of:

preparing for an object to be written to memory, including allocating space the object;

writing a portion of an object to memory; and

terminating writing to object memory for a specified object.

45. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises obtaining contents of a specified object.

46. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises removing at least one object from memory.

47. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises providing an object manager for receiving callbacks from a downloader regarding activity that occurs in the terminal related to downloaded objects.

48. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises purchasing a program.

49. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises at least one of:

requesting that a program on a currently-tuned Virtual Channel Number be purchased;

requesting that a purchase of a specified program be canceled;

requesting that a program package indicated by a package name on a currently tuned Virtual Channel Number be purchased;

requesting that a purchase of a specified packaged service be canceled; and

requesting information regarding all pending purchases.

50. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises enabling a user of the terminal, following system start-up, to refresh a purchase callback function pointer for a specified program or package purchase.

51. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises setting and/or checking a password.

52. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises at least one of:

setting the password for an indicated time slot; and

verifying a indicated password for a particular time slot.

53. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises initializing the at least one application program interface (API).

54. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises verifying that the at least one application program interface (API) is running.

55. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises configuring a platform of the terminal.

56. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises checking the validity of dynamic random access memory (DRAM) installed in the terminal by returning the starting address, size and validity of the DRAM.

57. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises returning the ENDIANness of a CPU of the terminal when the terminal is initialized.

58. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises checking a validity of a non-volatile memory (NVMEM) of the terminal by returning the starting address, size and validity of the NVMEM.

59. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises retrieving
information about the terminal including at least one of
the Platform ID, Manufacturer, Family and Model
information.

60. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises retrieving the
processor, bridge type and crystal speeds for the terminal.

61. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises retrieving MAC
addresses for interfaces of at least one of DOCSIS,
Ethernet, IEEE 1394, and USB components, and the terminal
itself.

62. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises retrieving at
least one of:
memory size information for memory components of the
terminal;
at least one of cable modem and DOCSIS option
information;
the type of output channel in use by the terminal;
information regarding an IEEE 1394 interface installed
in the terminal;
information regarding an Ethernet interface installed
in the terminal;
information regarding a parallel port installed in the
terminal;
information regarding the type of hard drive currently
installed in the terminal; and

information regarding the type of platform and the version of the platform currently running in the terminal.

63. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises diagnosing errors at the terminal.

64. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises indicating the type of error when an error has occurred.

65. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises providing diagnostic information regarding Interactive Pay-Per-View purchases at the terminal.

66. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises providing diagnostic information regarding an output port or re-modulated port of the terminal.

67. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises indicating at least one of:

the last reset time, the type of reset that occurred and the last Fatal Error Log entry;

a Virtual Channel Table ID for the virtual channel table that is resident in the terminal;

a status of out-of-band stream components;

a status of a current in-band multiplex;

a unit addresses assigned to the terminal;

a status of the last attempted primary service acquisition;

a renewable security status;

a transmission status of a RF modem installed in the terminal;

a status for firmware loaded into flash memory and all versions of non-volatile code that are installed in the terminal; and

a memory configuration for the terminal.

68. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises retrieving DOCSIS diagnostic information for On Screen Diagnostics or reportback.

69. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises returning a status of at least one of:

a USB port;

any installed devices;

an IEEE 1394 port;

an Ethernet port;

a parallel port;

an infra-red (IR) transmitter;

an IR keyboard;

an IR remote control;

a smart card;

a hard drive; and

a graphics system.

70. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises indicating whether a network adapter is available, and associated parameters and/or status thereof.

71. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises returning a Resource Authorization status for each resource in the terminal.

72. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises returning a lock status of MPEG video and audio streams, as well as a Program Clock Reference (PCR).

73. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises controlling an audio output of the terminal.

74. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises setting the terminal's Audio Output Mode to one of: Surround, Stereo, and Mono.

75. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises allowing a client to at least one of:
set an Audio Control Volume Mode;
enable or disable Audio Loop Thru to output an external audio source on baseband connectors, or mute the external audio source, respectively;

set an Audio Compression Dynamic Range Compression Mode to one of: No Compression, Light Compression and Heavy Compression;

select a Secondary Audio Program (SAP) Audio Source within an Analog Service, if available;

select the terminal's Digital Audio Output path instead of Analog Audio Output paths;

adjust the terminal's master audio volume, where the terminal adjusts left and right channel values;

adjust the terminal's master audio volume, including separate left and right channel values;

adjust the relative volume of TV audio sources, where the terminal adjusts left and right channel values;

adjust the relative volume of TV audio sources, including adjusts left and right channel values;

adjust the relative volume of local audio sources, where the terminal adjusts left and right channel outputs; and

adjust the relative volume of local audio sources, including left and right channel outputs.

76. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises selecting at least one of:

a master Audio Mute mode on or off;

a TV Audio Mute mode on or off; and

a Local Audio Mute mode on or off.

77. (Withdrawn) The interface of claim 1, wherein:

the function of the terminal comprises providing a single API call to report an Audio Status.

78. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises controlling a video output of the terminal.

79. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises selecting a TV Video Blank mode on or off.

80. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises controlling how a TV video is blanked by the terminal.

81. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises providing a single API call to report a Video Status.

82. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises authorizing a resource of the terminal.

83. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises obtaining a permission status of a resource.

84. (Withdrawn) The interface of claim 1, wherein:
the function of the terminal comprises at least one of:
registering a client to receive a notification when the authorization status of a resource changes; and
canceling a previously set up registration to receive

a notification when the authorization status of a resource changes.

85. (Withdrawn) The interface of claim 1, wherein:
    the function of the terminal comprises providing a high definition passthrough.

86. (Withdrawn) The interface of claim 1, wherein:
    the function of the terminal comprises at least one of:
    obtaining a block of protected flash memory data containing DTCP data;
    writing a block of NVRAM data containing DTCP data; and
    reading a block of NVRAM data containing DTCP data.

87. (Withdrawn) The interface of claim 1, wherein:
    the function of the terminal comprises at least one of:
    providing an alphanumeric description of the terminal on an IEEE 1394 bus;
    defining the current state of a Digital Television (DTV) connection; and
    obtaining an IEEE 1394 5C System Renewability Message.

88. (Original) The interface of claim 1, wherein:
    the terminal comprises a television terminal.

89. (Currently amended) A method for providing an interface to core system software in a user terminal, comprising the steps of:

providing a computer readable medium having computer program code; and

executing said computer program code to provide at least one software interface between: (a) middleware ~~that mediates between an application program and the core system software~~; and (b) the core system software and cable settop hardware;~~;~~

said middleware mediating between an application program and the core system software; and

said software interface enabling said application program to access a function of the terminal provided by said core system software via said middleware;

wherein the software interface enables compatibility between: (1) the core system software and cable settop hardware; and (2) different middleware.